UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,522	11/02/2001	Srinivas Uppugunduri	6482	5896

7590 05/20/2004

Samuels, Gauthier & Stevens LLP
225 Franklin Street, Suite 3300
Boston, MA 02110

EXAMINER	
KWON, BRIAN YONG S	
ART UNIT	**PAPER NUMBER**
1614	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/986,522	UPPUGUNDURI, SRINIVAS	
	Examiner	Art Unit	
	Brian S Kwon	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6 and 7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *6 and 7* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *10/20/03,10/30/03,1/15/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

1. Acknowledgement is made of applicant's filing of the instant application as RCE under 37 CFR 1.114.

2. Claims 6 and 7 are currently pending for prosecution on the merits.

3. Applicant's arguments with respect to claims 6-7 have been considered but are moot in view of the new ground(s) of rejection.

Priority

4. Receipt is acknowledged of papers (certified copy of the SWEDEN 9901615-6 filed on May 5, 1999) submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

5. Claim 7 is objected to because of the following informalities: Typographical error of "n amount" in line 2. It should be corrected as "an amount".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 6-7 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treating the specific acute or chronic inflammations (i.e., reperfusion

injury, coronary heart disease, arteriosclerosis, restenosis after coronary angioplasty, asthma, rheumatoid arthritis), does not reasonably provide enablement for "acute or chronic inflammation and/or problems in hemostasis related to platelet function". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims.

The factors to be considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. 112, first paragraph, have been described in In re Wands, 8 USPQ2d 1400 (Fed. Cir. 1988). Among these factors are: (1) the nature of the invention; (2) the state of the prior art; (3) the relative skill of those in the art; (4) the predictability or unpredictability of the art; (5) the breadth of the claims; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary. When the above factors are weighed, it is the examiner's position that one skilled in the art could not practice the invention without undue experimentation.

(1) The nature of the invention:

The invention relates to a method of treating "acute or chronic inflammation and/or problems in hemostasis related to platelet function" with administration of one or more of compounds selected from group consisting of 4-thiouridine, isomaltitol and uridine, with the exception of the use of uridine in the treatment of inflammatory conditions caused by a bacterial infection as administered to a subject in need of such treatment.

(2) The state of the prior art

There are no known compounds of same or similar structure which have been demonstrated to treat all types of "acute or chronic inflammation" conditions or disease and/or "problems in hemostasis related to platelet function".

(3) The relative skill of those in the art

The relative skill of those in the art of pharmaceuticals is high.

(4) The predictability or unpredictability of the art

The unpredictability of the pharmaceutical art is very high.

(5) The breadth of the claims

The breath of the claims encompasses asthmatic conditions, Crohn's disease, ulcerous colitis, reperfusion injury, auto-immune diseases, inflammatory bowel disease (IBD), arteriosclerosis, restenosis, cancer, coronary heart disease, diabetes, rheumatoidal arthritis, dermatological diseases, etc... For instance, the instant claims cover cancers of all types. There is no compound has ever been found to treat all types of cancers. Since this assertion is contrary to what is known in medicine, proof must be provided that this revolutionary assertion has merits. The existence of such a "silver bullet" is contrary to our present understanding of oncology. Cecil Textbook of Medicine states that "each specific type has unique biologic and clinical features that must be appreciated for proper diagnosis, treatment and study" (see the enclosed article, page 1004). Different types of cancers affect different organs and have different methods of growth and harm to the body. Also see In re Buting, 163 USPQ 689 (CCPA 1969), wherein 'evidence involving a single compound and two types of cancer, was held insufficient to establish the utility of the claims directed to disparate types of cancers'. Thus, it is beyond the

skill of oncologists today to get an agent to be effective against all types of cancers or "acute or chronic inflammations and/or problems in hemostasis related to platelet function".

(6) The amount of direction or guidance presented

The specification discloses the efficacy of the claimed compound (i.e., 4-thiouridine, uridine or isomaltitol) in blocking adhesion of neutrophils or colon cancer cells to L-cells transfected with E-selectin or (page 3, line 25 thru page 6, line 32) or in inhibiting adhesion of neutrophils to TNF stimulated HUVEC-4, thereby suggesting the utility of said compounds for the treatment of inflammatory conditions including asthmatic conditions, Crohn's disease, ulcerous colitis, reperfusion injury, auto-immune diseases, inflammatory bowel disease (IBD), arteriosclerosis, restenosis, cancer, coronary heart disease, diabetes, rheumatoidal arthritis, dermatological diseases (i.e, psoriasis, seborrhea, burn injury) and graft rejection.

However, the specification provides no guidance, in the way of enablement for the entire scope of "acute or chronic inflammations" or "problems in hemostasis related to platelet function". The specification does not provide sufficient guidance or direction for the skill artisan to ascertain that the administration of said compounds are capable of accomplishing the desired result of the claimed invention without undue amount of experimentation. The instantly claimed "acute or chronic inflammation and/or problems in hemostasis related to platelet function" read on all types of inflammatory diseases or any problems in hemostasis related to platelet function, necessitating an exhaustive search for the embodiments suitable to practice the claimed invention.

(7) The presence or absence of working examples

As stated above, the specification discloses only examples of inflammatory conditions that are suitable in the invention, e.g., asthmatic conditions, Crohn's disease, ulcerous colitis, reperfusion injury, auto-immune diseases, inflammatory bowel disease (IBD), arteriosclerosis, restenosis, cancer, coronary heart disease, diabetes, rheumatoidal arthritis, dermatological diseases (i.e, psoriasis, seborrhea, burn injury) and graft rejection.

(8) The quantity of experimentation necessary

The quantity of experimentation needed to be performed by one skilled in the art is yet another factor involved in the determining whether "undue experimentation" is required to make and use the instant invention. For these reasons, one of ordinary skill in the art would be burdened with undue "painstaking experimentation study" to determine all of "acute or chronic inflammations" and/or "problems in hemostasis related to platelet function" that would be enabled in this specification.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 6 is rejected under 35 U.S.C. 102(b) as being anticipated by Von Borstel et al. (WO 96/01115).

The claims are directed to a method for treatment of acute or chronic inflammations and/or problems in hemostasis related to platelet function comprising administering to a subject in need of such treatment one or more of the compounds of group consisting 4-thiouridine,

isomaltitol and uridine, with the exception of the use of uridine in the treatment of inflammatory conditions caused by bacterial infection.

Von Borstel teaches the use of uridine for treatment of cancer (page 9, para. 4; claim 19).

Since the referenced cancer treatment includes in the instantly defined diseases that are not caused by bacterial infection (page 2, line 33 thru page 3, line 2), the referenced method clearly anticipates the claimed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Von Borstel et al. (WO 96/01115).

The teaching of Von Borstel has been discussed in above 35 USC 102(b) rejection.

The claimed invention differs from the reference by the specific serum concentration of the active compound, namely 0.1 to 100nM. However, those ordinary skilled in the art would have been readily determine optimum concentration as determined by good medical practice and the clinical condition of the individual patient. Since monitoring of serum concentration of the active compound (i.e., measure peak and trough) is routinely done in the clinical setting to optimize the therapeutic efficacy of the drug as well as reducing the unwanted adverse effect of the drug, such determination of appropriate serum concentration of the drug for treatment involving each of the above mentioned formulations is routinely made by those of ordinary skill in the art and is within the ability of tasks routinely performed by them without undue experimentation, especially in light of the dosage information disclosed in von Borstel.

Generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indication such concentration is critical. "Where the general conditions of a claim are disclosed in the prior art, it is not inventive discover optimum or workable ranges by routine experimentation." *In re Aller, 220 F. 2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).*

Conclusion

9. No Claim is allowed.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Kwon whose telephone number is (571) 272-0581. The examiner can normally be reached Tuesday through Friday from 9:00 am to 7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel, can be reached on (571) 273-0584. The fax number for this Group is (703) 872-9306.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Brian Kwon
Patent Examiner
AU 1614

Vickie Kim
PRIMARY EXAMINER
GROUP 1600